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UTAH DIVISION OF
SOLID & HAZARDOUS WASTE

CLASS 2 MODIFICATION

TO THE

TOCDF RCRA PERMIT

REQUEST NUMBER: TOCDF-MDM-02-0836

REQUEST TITLE: Froth Collection System for MDMs

EPA ID: UT 5210090002

TO: UTAH DIVISION OF SOLID AND HAZARDOUS WASTE
1460 WEST 288 NORTH
P. O. BOX 144880
SALT LAKE CITY, UTAH 84114-4880

TITLE: FROTH COLLECTION SYSTEM FOR MDMS

CLASS: Class 2 Modification - 40 CFR 270.42 (d)

INDEX

Section

A: DESCRIPTION OF CHANGES

REQUEST TO CLASSIFY AS A CLASS 2 MODIFICATION

In accordance with 40 CFR 270.42(d)(1), the Tooele Chemical Agent Disposal Facility (TOCDF) requests a determination that this modification should be reviewed and approved as a Class 2 Modification Request to the TOCDF Resource Conservation and Recovery Act (RCRA) Permit. This modification request contains in Section E the information necessary to justify the requested classification.

SCOPE OF THIS MODIFICATION REQUEST

This scope of this modification request includes only the installation of the newly-designed Froth Collection System onto the existing Multipurpose Demilitarization Machines (MDMs)—which are currently-permitted 40 CFR 264 Subpart X "Miscellaneous Treatment Units". The treatment of 4.2-inch Mustard mortars at the MDMs and the Metal Parts Furnace (MPF) is not within the Baseline Mustard Tons campaign and will be the subject of a later Class 3 RCRA modification request. This Froth Collection System modification is being requested now in order to install the necessary hardware before the Mustard Baseline campaign begins, thereby taking advantage of the recently decontaminated MPB.

BACKGROUND

TOCDF has completed destruction of warfare munitions containing GB (Sarin) and VX. TOCDF is now scheduled to begin the destruction of munitions and containers filled with the chemical warfare agents designated as H, HD and HT (collectively referred to as "Mustard" blister agent). The Mustard "campaign" is the third and final agent demilitarization campaign TOCDF is to undertake.

The DCD chemical weapons stockpile includes approximately 63,500 4.2-inch mortar rounds. Experience at the Johnston Island JACADS has shown that some of the mustard-containing mortars may have experienced age-related degradation resulting in a susceptibility to effervescence when the agent cavity is breached. Such effervescing munitions at JACADS have been described as "champaign mortars" in reference to their effervescent or "frothing" tendency when the burster well was removed. Previously-processed GB and VX-containing projectiles at TOCDF did not exhibit the "frothing" tendency that is anticipated with the upcoming Mustard mortars.

The current design configuration of the MDM Pull and Drain station includes drip pans in order to limit agent contamination of the machinery and other surfaces. The drip pans include small drains and suction lines connected directly to the Agent Collection system piping at the suction side of the agent transfer pump. However, the Pull and Drain Station, as currently configured, would not be able to limit agent contamination

that would result from a frothing agent that might run down the sides of the mortar and onto machinery and equipment surfaces.

In an effort to minimize frothing-related agent contamination of machinery and equipment, a "froth collection system" was designed and tested at the Chemical Demilitarization Training Facility (CDTF) in Edgewood, Maryland. The froth-collection system design was based on operational experience gained at JACADS.

Current Design Operation

Before being drained at the MDMs, the 4.2-inch mortars will have their burster/fuze assemblies removed in the Explosive Containment Room (ECR). After exiting the ECR, the mortars will be oriented vertically upright and transferred to the Munitions Processing Bay (MPB) where they will be placed on one of three Multi-Purpose Demilitarization Machines (MDMs). In order to access the agent in the mortar's agent cavity, the MDM's Pull and Drain Station machinery will raise up so that the mortar's nose is in contact with the stop plate prior to removal of the burster well. As was experienced at JACADS, as soon as the burster well was unseated, the agent cavity became exposed to atmospheric pressure, allowing dissolved gases in the liquid agent to effervesce, frothing liquid agent upward and out of the mortar.

Problem with Current Design Operation

Although Mustard 4.2-inch mortars have never been processed at the TOCDF's MDMs, it is anticipated that the same effervescing or frothing problem will be encountered as was experienced at JACADS. The problems experienced at JACADS, if not accounted for through design changes, is expected to occur at TOCDF.

Modified MDM Configuration Objectives

The modified Pull and Drain Station is designed to:

1) Minimize the escape of frothed agent from the ACS system to the MPB's room's sumps and the SDS system
2) Minimize liquid agent contamination of the mortar's outer surface, machinery, equipment, room surfaces, and LSS air hoses
3) Reduce airborne agent concentrations in the MPB HVAC flow that would result from increased liquid Mustard contamination.

MDM Mortar Froth Collection System Description

The MDM froth collection system consists of six key elements:

1) A modified stop plate
   The mortar is raised by the lift cylinder until it is firmly in contact with the stop plate, which holds the mortar's body down while the burster well is removed upward. The existing stop plate will be replaced with a new stop plate with a radial hole bored and tapped to provide a suction pathway from the inner hole that immediately surrounds the burster well press fit. The radial hole thus is at the location where the froth will begin to exit the mortar. To accommodate the radial hole, the new stop plate will be made thicker than the previous stop plate.
2) A froth dam
   The froth dam is an open-ended canister facing upward that will serve as a temporary chamber accumulating froth until the suction is capable of drawing the froth away into the agent collection system.
3) A froth shield
   The froth shield serves to redirect froth ejected out of the mortar downward into the froth dam.
4) Frame spacer plates
   Due to the additional thickness of the stop plate, the entire pull and drain framework will need to be raised an additional 1-3/8" to restore the mortar's overhead clearance.
5) A modified drip pan cylinder hanger bracket
   Because the existing drip pan hydraulic cylinder is mounted to the pull and drain framework, which will be raised, a lengthened cylinder mounting bracket will be required to account for the modified overall dimensions.
6) An air actuated ball valve
   Tubing will be attached to the modified stop plate's radial hole running to the agent pump suction piping in an identical manner as the drip pans' drain tubing. Because the suction will be activated at key steps in the pull and drain sequence, an air actuated ball valve will be installed within the suction tubing. A solenoid valve will control actuation air (instrument air) to the ball valve.

PERMIT WORDING CHANGES

Attachment 14 "Demilitarization Miscellaneous Treatment Units":

Add the froth collection feature to the description of the MDM's pull and drain operation.

Attachment 17

Add the MDM pull and drain stations' agent-containing froth collection system, as well as the existing drip pan piping components to the equipment lists for 40 CFR 264 Subpart BB –"Air Emissions Standards for Equipment Leaks".

B: RCRA PERMIT CHANGE PAGES

CHANGE PAGES IN BODY OF PERMIT:

None

CHANGE PAGES IN ATTACHMENTS OF PERMIT:

Attachment 14, "Demilitarization Miscellaneous Treatment Units"

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Attachment 17, "Equipment Lists"

Pages 4, 5, 6 and 7

CHANGES TO DRAWINGS IN PERMIT

P&IDs

1) TE-1-D-521 Sheet 1 of 1, Agent Collection System PHS-MDM-101
2) EG-01-D-521 Sheet 1 of 2, Agent Collection System PHS-MDM-102
3) EG-01-D-521 Sheet 2 of 2, Agent Collection System PHS-MDM-103

rotated so that the first munition goes to Station 3 and the second moves to Station 2. Another munition is placed in the Load/Unload Station and the table is rotated again. Eventually, the MDM is operated so that all six stations have a munition (except when the munitions tray does not have enough remaining unprocessed munitions to deliver to the MDM). Stations 2 and 3 do not perform any operations.

14.5.2.2.6 Station 4 is normally used as the Bore Station. It is designed to bore out welded or stuck burster wells. This station is not expected to be used very frequently because most of the munition burster wells were assembled with the press fit method. If a munition requires boring, a clamp cylinder extends and holds the munition in place while the boring head (consisting of an appropriately sized spade drill bit) bores vertically down through the top of the munition. The bore head is raised and lowered by a feed cylinder that contains the bore head drill and motor and is mounted on four vertically-mounted bolster rods. As an alternative, this position can also be configured as a Nose Closure Removal/Burster Detection Station, which may be used to process projectiles received at the TOCDF without bursters. At this station, the nose plugs will be removed and the absence of a burster will be confirmed.

14.5.2.2.7 Station 5 is the Pull and Drain Station. It is designed to remove the burster well, thus providing access to the agent-filled cavity in the munition, and then to drain the agent from the munition. Upon entering Station 5, the munition is lifted slightly and held in place while the carriage assembly, which contains a collet assembly and pull cylinders, is lowered so that the collet assembly enters the munition. The collet expands to grip the burster well, and the pull cylinders extend to raise the collet assembly and the burster well from the munition. During burster well removal, a suction may be applied at the munition's nose in order to contain within the ACS system froth that may develop.

14.5.2.2.8 After the burster well is removed from the munition, the munition is shifted horizontally into the Drain Station position. A drain tube, which consists of a straight, hollow, steel tube, is lowered into the munition, and the ACS removes the agent from the munition. Under normal operations, it is expected that some of the agent will not be removed by this process. After draining the munition, the drain tube is retracted, the munition returns to the Pull Station, and the burster well is placed back in the munition (or, for some munition types, it is dropped into the burster well chute). Station 5 contains a drip pan to collect residual agent that may drip from the burster well and agent drain tube.

14.5.2.2.9 Station 6 is the Crimp Station. It is designed to remove the burster well from the munition and crimp it. Crimping the burster well deforms it so that it no longer seats completely in the munition when replaced. The resulting gap between the burster well and the agent cavity allows a more thorough thermal combustion of the agent heel in the MPF. The burster well is removed from the munition by the burster well gripper assembly. The burster well crimp jaw closes around the burster and deforms it. A strip cylinder is used to remove the burster well from the gripper assembly, where it may become stuck during compression.

14.5.2.2.10 The munition is rotated to Station 1 after it is drained and the crimped burster well is placed back into the munition (except for those munitions where the burster well is discarded at Station 5). A burster well detector sensor located at Station 1 checks for the presence of a burster well. If a burster well is not detected, the PPM places the munition

Table 17-1: ACS Equipment Subject to 40 CFR 264 Subpart BB Requirements[1]						
Haz Waste Mgmt Unit	Equipment Tag No.	Location[2]	Equipment Type	Organic Content (wt%)	Physical State	Method of Compliance with the Standards
ACS - drain from BDS	51-1"-V-22	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	SP-159	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	ACS-PUMP-115	MPB	Pump	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	SP-159	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	51-1"-V-23	MPB	Valve to hose with quick disconnect male w/ dust cap/Teflon gasket.	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	51-1"-V-24	MPB	Check Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	1"-V-23A	MPB	Valve (blinded)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	3/4"-V-9020D	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	FV-20	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from BDS	1"-V-26	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	MDM 101 Drain Tube Flex Hose	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-74	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-TANK-108	MPB	Flanged Connections	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1/2"-V-53D	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1/2"-V-53E	MPB	Valve (sampling)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-75	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-FILT-105	MPB	Flanged Connections	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	PI-73	MPB	Flanged Connection w/ isolation valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1 1/2"-V-50	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-51	MPB	Valve (w/quick disconnect)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-54	MPB	Valve (w/quick disconnect)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-58	MPB	Check Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-53	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-PUMP-105	MPB	Pump	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)

Table 17-1: ACS Equipment Subject to 40 CFR 264 Subpart BB Requirements[1]						
Haz Waste Mgmt Unit	Equipment Tag No.	Location[2]	Equipment Type	Organic Content (wt%)	Physical State	Method of Compliance with the Standards
ACS - drain from MDM	Flex Hose	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-77	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-73B	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	LIT-73	MPB	Flanged Connection	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-9109	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (froth collection)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-9077	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-9078	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (burster well drip pan)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (drain tube drip pan)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	MDM 102 Drain Tube Flex Hose	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-84	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-TANK-106	MPB	Flanged connections	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1/4"-V-83D	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1/4"-V-83E	MPB	Valve (sampling)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-85	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-FILT-106	MPB	Flanged connections	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	PI-81	MPB	Flanged Connection w/ isolation valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex hose	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1 1/2"-V-74	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-75	MPB	Valve (w/quick disconnect)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-76	MPB	Valve (w/quick disconnect)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-79	MPB	Check Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-77	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	SP-159	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-PUMP-106	MPB	Pump	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	SP-159	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-87	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)

Table 17-1: ACS Equipment Subject to 40 CFR 264 Subpart BB Requirements[1]						
Haz Waste Mgmt Unit	Equipment Tag No.	Location[2]	Equipment Type	Organic Content (wt%)	Physical State	Method of Compliance with the Standards
ACS - drain from MDM	XV-83B	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	LIT-83	MPB	Flanged connection	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-9110	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (froth collection)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-9087	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-9088	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (burster well drip pan)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (drain tube drip pan)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	MDM 103 Drain Tube Flex Hose	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-94	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-TANK-107	MPB	Flanged connections	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1/4"-V-93D	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1/4"-V-93E	MPB	Valve (sampling)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-95	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-FILT-107	MPB	Flanged connections	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	PI-93	MPB	Flanged Connection w/ isolation valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex hose	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1 1/2"-V-90	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-91	MPB	Valve (w/quick disconnect)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-94	MPB	Valve (w/quick disconnect)	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-98	MPB	Check Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	1"-V-93	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	SP-159	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	ACS-PUMP-107	MPB	Pump	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	SP-159	MPB	Flex connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-97	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-93B	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	LIT-93	MPB	Flanged connection	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)

Table 17-1: ACS Equipment Subject to 40 CFR 264 Subpart BB Requirements[1]						
Haz Waste Mgmt Unit	Equipment Tag No.	Location[2]	Equipment Type	Organic Content (wt%)	Physical State	Method of Compliance with the Standards
ACS - drain from MDM	XV-9111	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (froth collection)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-9097	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	XV-9098	MPB	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (burster well drip pan)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS - drain from MDM	Flex Hose (drain tube drip pan)	MPB	Flex Connector	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	2"-V-82	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	2"-V-76	TOX	Check Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	1 1/2"-V-81	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	1-1/2"-V-77	TOX	Check Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	LV-84	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	2"-V-78	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	LE-91	TOX	Flange connection	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	LIT-93	TOX	Flange connections w/ chemical seals	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	LE-95	TOX	Flange connection w/ plug drain valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	PSE-162	TOX	Rupture Disc w/ Flange connections	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	PSV-161	TOX	Pressure Relief Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	2"-V-87	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	1-1/2"-V-85	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	1-1/2"-V-86	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	2"-V-81	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	2"-V-84	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	2"-V-79	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	LV-97	TOX	Valve	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	PDIT-099	TOX	Flange connections w/ chemical seals	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)
ACS Tanks	SP-102	TOX	Flange connections	> 10%	Liquid	R315-8-18 (40 CFR 264.1058 and 1059)

C: FACILITY IMPACT

Physical Facility Impacts

The new fully-tested froth collection assembly will be installed at each of the three MDMs. In addition, the Process computer code will be revised to incorporate the automatic operation of an electrical solenoid valve that provides actuation air to the ball valve within the agent suction line.

Administrative Facility Impacts

In accordance with the site Configuration Management Process for engineering changes, Plant procedures, training plans, drawings and miscellaneous documents will be revised to incorporate the new froth collection equipment.

Facility Personnel Impacts

Additional toxic entries by facility personnel will be required to install the froth collection equipment and perform various post-installation testing. Once fully installed and tested, it is anticipated that the operation of the MDM will not require more toxic entries than would have been required to support the previous MDM configuration. The automated operation of the new MDM pull and drain froth collection system will not require any additional operations personnel effort.

D: HEALTH/ENVIRONMENTAL IMPACT

There are no adverse health or environmental impacts associated with this modification, based on the following:

1) This modification will enable TOCDF to minimize agent contamination of plant equipment from the possibility of excessive frothing of Mustard.

2) This modification reduces the potential for agent contamination of Life Support System (LSS) hoses whenever toxic area entrant personnel are working in the vicinity.

3) This modification reduces airborne concentrations of Mustard vapor that may result from drippage or spillage.

E: JUSTIFICATION

CLASS 2 MODIFICATION TO RCRA PERMIT

In accordance with 40 CFR 270.42(d)(1), the Tooele Chemical Agent Disposal Facility (TOCDF) has requested a determination that this modification should be reviewed and approved as a Class 2 Modification Request.

As opposed to Class 1 and Class 3 modifications, Class 2 modifications apply to changes that are necessary to enable a permittee to respond in a timely manner to "common variation of wastes" and to "technological advancements". Class 1 modifications apply to minor changes that keep the permit current, whereas Class 3 modifications "substantially alter the facility or its operation".

Common Variations of Wastes

TOCDF has previously treated 105-mm and 155-mm projectiles at the MDMs. The existing design of the MDM does not have any provisions for capturing agent that may foam or otherwise be expelled up and out of the mortar when the agent cavity is opened up for draining. None of the projectiles previously treated on the TOCDF MDMs exhibited a tendency to froth or foam. Experience at JACADS revealed that some of the 4.2-inch Mustard mortars have experienced internal pressurization. This pressurization resulted in a frothing of the Mustard contents when the burster well press fit was initially loosened. TOCDF is preparing to treat the same types of Mustard mortars that were treated at JACADS.

Technological Advancements

The newly-designed MDM froth collection system has features that did not exist on the previous MDMs. The MDM froth collection system was designed based upon operating experience at JACADS with the Mustard-containing munitions.

Substantial Alteration of the Facility or Operation

The overall objective of the MDM remains the same, regardless of the addition of the froth collection feature. The modified MDM design will function as effectively with non-pressurized or non-frothing mortars.

1) The MDM pull and drain station will pump liquid agent from the mortar, agent drippage from the drip pans, and agent froth that may collect in the froth collection system.

2) The liquid agent within the mortar will be pumped to the Agent Quantification System (AQS) prior to transfer to the ACS tanks for ultimate destruction in the LIC primary chamber.
3) The liquid agent captured on the drip pans and within the froth collection system will be transferred directly to the ACS for destruction in the LIC primary chamber.

Because the installation of the froth collection system does not substantially alter the facility or its operation, this request does not meet the intent of a Class 3 modification.

Attachment 14, "Demilitarization Miscellaneous Treatment Units"

A one-sentence description of the froth collection feature has been added to the MDM's operation.

Attachment 17, "Equipment Lists"

The froth collection system is designed to contain chemical agent, a hazardous waste with greater than 10% organic content. As such, the froth collection system is subject to the rules of 40 CFR 264 Subpart BB "Air Emissions Standards for Equipment Leaks". Attachment 17 of the RCRA permit contains a complete listing of ACS equipment subject to Subpart BB. In addition to the new froth collection system, equipment associated with the existing drip pans was also added to the equipment lists.

F: REFERENCE DRAWINGS

1) EG&G Drawing TE-1-D-521 Sheet 1
   P&ID - MDB Agent Collection PHS-MDM-101

2) EG&G Drawing EG-01-D-521 Sheet 1
   P&ID - MDB Agent Collection PHS-MDM-102

3) EG&G Drawing EG-01-D-521 Sheet 2
   P&ID - MDB Agent Collection PHS-MDM-103

4) EG&G Drawing EG-01-M-5102 Sheet 2
   MDB ACS-PHS-MDM-101 Assembly

5) EG&G Drawing EG-01-M-5102 Sheet 1
   MDB ACS-PHS-MDM-102 Assembly

6) EG&G Drawing EG-01-M-5114 Sheet 1
   MDB ACS-PHS-MDM-103 Assembly

7) General Physics Corp. Drawing 45-0221 Sheet 1
   Assembly Drawing – Froth Collection - MDM

8) General Physics Corp. Drawing 45-0287 Sheet 1
   Modified Stop Plate 4.2 Mortar – Froth Collection System – MDM Punch [sic] & Drain Station

9) General Physics Corp. Drawing 45-0321 Sheet 1
   Froth Dam and Froth Cylinder Hanger - MDM

10) General Physics Corp. Drawing 45-0329 Sheet 1
    MDM Froth Shield for 4.2 Mortar

11) General Physics Corp. Drawing 45-0324 Sheet 1
    Frame Spacer for Froth Collection – MDM Punch [sic] and Drain Station

CORPS OF ENGINEERS

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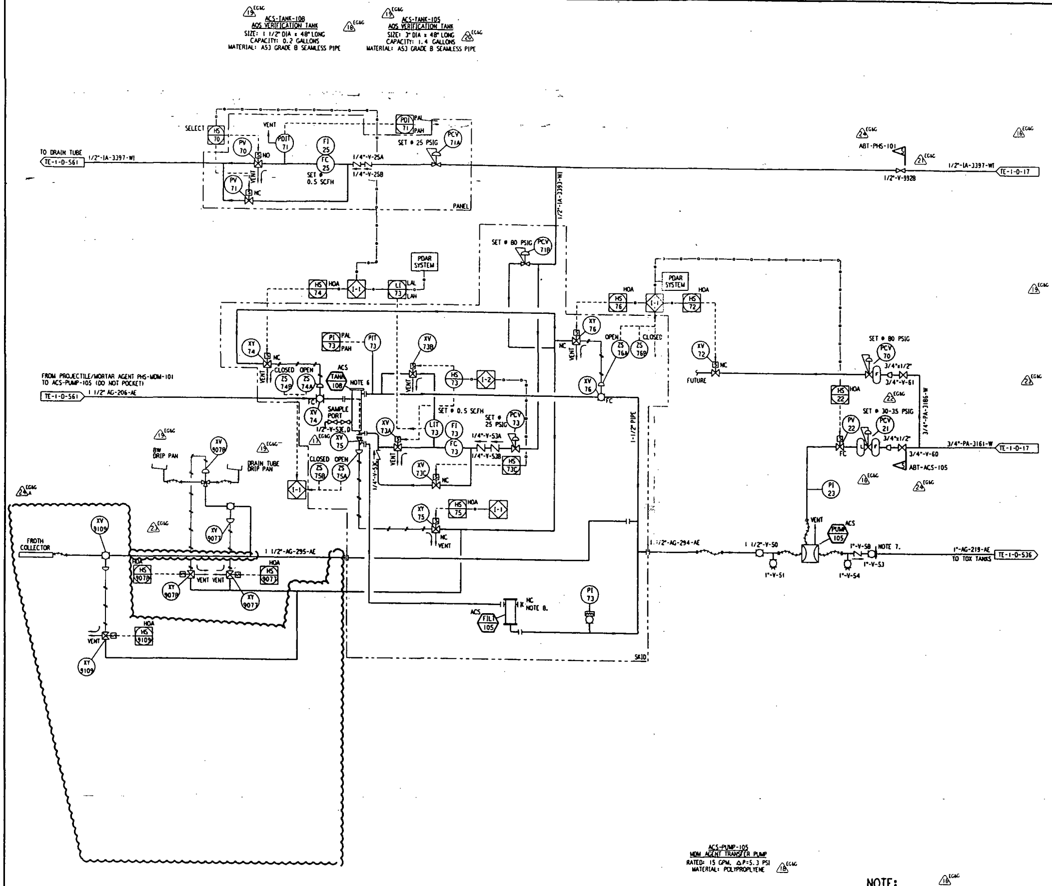
DRAWING STATUS										
NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK.	[illegible] ENGR.	PROJ. ENGR.	[illegible] ENGR.	PROJ. MGR.	D.A.O.C. MGR.
19a	08/11/99	REVISED PER ECP 3164	SDN	JFS	DRD	DP			
20a	04/10/01	REVISED PER ECP 3826; MDM-01-0576	SDN	SLD		DP			
21a	12/02/02	REVISED PER EWO 02-0015740	SDN	SLD	RCR				
22a	12/09/03	REVISED PER EWO 03-0018482	DLP	TLW		MSB			
23a	02/23/04	REVISED PER EWO 04-35048 & ECP 4214	TLW	DLP		MSB			
24	05/16/05	REVISED PER EWO 85474	TLW	DLP		LRO			
24A	01/11/05	REVISED PER EWO 106334 & ECP 4333	DLP						



NOTES:

1. ALL INSTRUMENT AND VALVE TAG NUMBERS ARE PREFIXED WITH 04-51, EXCEPT AS NOTED.
2. FOR LEGEND, SYMBOLS, AND GENERAL NOTES, SEE DRAWING TE-00-D-901.
3. MINIMIZE LENGTH OF ALL AGENT PIPING.
4. PCV AND FILTER/LUBRICATOR TO BE SUPPLIED WITH THE PUMP.
5. ALL INSTRUMENTATION TO BE SUPPLIED WITH THE AOS VERIFICATION TANK.
6. AOS VERIFICATION TANKS ACS-TANK-105 OR ACS-TANK-108 WILL BE USED AS REQUIRED FOR THE MUNITIONS TYPE BEING PROCESSED.
7. INSTALL SPECTACLE BLIND WHEN NOT IN USE.
8. (OPTION) DECON TAP.

LEGEND:

19 EG&G ----- FUTURE FROTH COLLECTION FOR HD CAMPAIGN

REFERENCE DRAWINGS:

EG-01-M-5114 MDB ACS PHS-MDM-103 ASSEMBLY
EG-01-M-5102 SHT.1 MDB ACS PHS-MDM-102 ASSEMBLY
EG-01-M-5102 SHT.2 MDB ACS PHS-MDM-101 ASSEMBLY
EG-01-D-521 SHT.1 MDB AGENT COLLECTION SYSTEM PHS-MDM-102 P&ID
EG-01-D-521 SHT.2 MDB AGENT COLLECTION SYSTEM PHS-MDM-103 P&ID
EG-01-M-5101 SHT.2 MDB ACS PHS-MDM-102 INSTALLATION DETAILS
EG-01-M-5101 SHT.3 MDB ACS PHS-MDM-101 GENERAL ARRANGEMENT
EG-01-M-5115 SHT.1 MDB ACS PHS-MDM-103 INSTALLATIONS DETAILS
EG-01-M-5115 SHT.2 MDB ACS PHS-MDM-103 PIPE SPOOLS DETAILS

NOTE:
REFER TO DRAWING EG-01-D-521 SHEET 1 PHS-MDM-102 AND EG-01-D-521 SHEET 2 PHS-MDM-103 FOR INFORMATION ON AGENT COLLECTION SYSTEM

Symbol	Description	Date	Approved
24 EG&G	REVISED FOR CONSTRUCTION		
24 EG&G	REVISED AS BUILT	06/09/05	LRO
23 EG&G	REVISED AS BUILT	06/25/04	MSB
22 EG&G	REVISED	12/09/03	MSB
21 EG&G	REVISED PER CONSTRUCTION	12/16/02	RCR
20 EG&G	REVISED PER CONSTRUCTION	04/10/01	DP
19 EG&G	REVISED PER CONSTRUCTION	08/11/99	DRD
18 EG&G	REVISED PER CONSTRUCTION	12/16/98	DRD

Revisions

DEPARTMENT OF THE ARMY
PROGRAM MANAGER FOR
CHEMICAL DEMILITARIZATION
ABERDEEN PROVING GROUND, MARYLAND

US ARMY ENGINEER DIVISION HUNTSVILLE
CORPS OF ENGINEERS
HUNTSVILLE, ALABAMA

RMP
THE RALPH M. PARSONS COMPANY
PASADENA, CALIFORNIA

US Army Corps of Engineers

TOOELE ARMY DEPOT
TOOELE, UTAH

CHEMICAL STOCKPILE DISPOSAL PROGRAM
MUNITIONS DEMILITARIZATION BUILDING
AGENT COLLECTION SYSTEM PHS-MDM-101
PIPING & INSTRUMENT DIAGRAM

Dwn.by: F.C | Ckd.by: JRJ
Reviewed by: J.R. JONES P.E.
Approved by: K.R. BURCHETT
Date: 7 AUG 89
Drawing code: F-226-90-02-TE
Sheet reference number: TE-1-D-521
Design file no. 44071
EG&G Rev. 24A
Sheet 1 of 1

MPI:TE01D521.PLT

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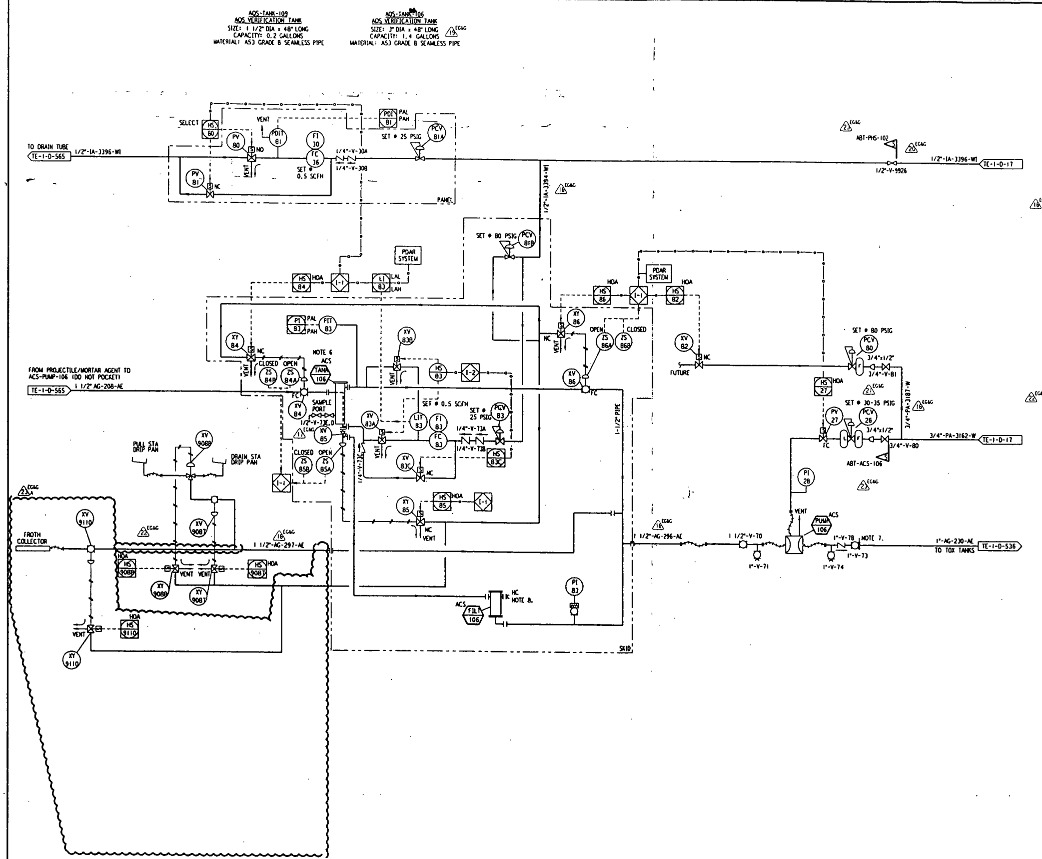
NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK.	PROJ. ENGR.	PROJ. ENGR.	CE ENGR.	PROJ. MGR.	D.A.B.C. MGR.	
18d	12/15/98	REVISED PER ECP 2569; MDM-01-0418	SDN	JFS	DRD	DP				
19a	04/10/01	REVISED PER ECP 3826; MDM-01-0576	SDN	RCR		DP				
20a	12/02/02	REVISED PER EWO 02-0015740	SDN	SLD	RCR					
21a	12/09/03	REVISED PER EWO 03-0018482	DLP	TLW		MSB				
22a	02/23/04	REVISED PER EWO 04-35048 & ECP 4214	TLW	DLP		MSB				
23	05/19/05	REVISED PER EWO 85474	TLW	DLP		LRO				
23A	07/11/05	REVISED PER EWO 106334 & ECP 4333	DLP							



NOTES:

1. ALL INSTRUMENT AND VALVE TAG NUMBERS ARE PREFIXED WITH 04-51, EXCEPT AS NOTED.
2. FOR LEGEND, SYMBOLS, AND GENERAL NOTES, SEE DRAWING TE-00-D-901.
3. MINIMIZE LENGTH OF ALL AGENT PIPING.
4. PCV AND FILTER/LUBRICATOR TO BE SUPPLIED WITH THE PUMP.
5. ALL INSTRUMENTATION TO BE SUPPLIED WITH THE AQS VERIFICATION TANK.
6. ACS VERIFICATION TANKS ACS-TANK-106 OR ACS-TANK-109 WILL BE USED AS REQUIRED FOR THE MUNITION TYPE BEING PROCESSED.
7. INSTALL SPECTACLE BLIND WHEN NOT IN USE.
8. (OPTION) DECON TAP.

LEGEND:

- - - - FUTURE

REFERENCE DRAWINGS:

EG-01-M-5114 MDB ACS PHS-MDM-103 ASSEMBLY
EG-01-M-5102 SHT.1 MDB ACS PHS-MDM-102 ASSEMBLY
EG-01-M-5102 SHT.2 MDB ACS PHS-MDM-101 ASSEMBLY
EG-01-D-521 SHT.2 MDB AGENT COLLECTION SYSTEM PHS-MDM-103 P&ID
TE-01-D-521 MDB AGENT COLLECTION SYSTEM PHS-MDM-101 P&ID
EG-01-M-5101 SHT.2 MDB ACS PHS-MDM-102 INSTALLATION DETAILS
EG-01-M-5101 SHT.3 MDB ACS PHS-MDM-101 GENERAL ARRANGEMENT
EG-01-M-5115 SHT.1 MDB ACS PHS-MDM-103 INSTALLATION DETAILS
EG-01-M-5115 SHT.2 MDB ACS PHS-MDM-103 PIPE SPOOLS DETAILS

NOTE:
REFER TO DRAWING TE-1-D-521 PHS-MDM-101 AND EG-01-D-521 SHEET 2 PHS-MDM-103 FOR INFORMATION ON AGENT COLLECTION SYSTEM

Symbol	Description	Date	Approved
23A	REVISED FOR CONSTRUCTION		
23	REVISED AS BUILT	06/09/05	LRO
22	REVISED AS BUILT	05/25/04	MSB
21	REVISED	12/09/03	MSB
20	REVISED PER CONSTRUCTION	12/16/02	RCR
19	REVISED PER CONSTRUCTION	05/14/01	DP
18	REVISED PER CONSTRUCTION	12/16/98	DRD
17	REVISED PER CONSTRUCTION	11/5/98	DP
Revisions			

DEPARTMENT OF THE ARMY
PROGRAM MANAGER FOR
CHEMICAL DEMILITARIZATION
ABERDEEN PROVING GROUND, MARYLAND

US ARMY ENGINEER DISTRICT SACRAMENTO
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

EG&G A Division of URS

US Army Corps of Engineers

TOOELE ARMY DEPOT
TOOELE, UTAH

CHEMICAL STOCKPILE DISPOSAL PROGRAM
MUNITIONS DEMILITARIZATION BUILDING
AGENT COLLECTION SYSTEM PHS-MDM-102

PIPING & INSTRUMENT DIAGRAM

Drawn by: SW NICHOLES	Date: 10/01/98	Scale: NO SCALE	Sheet reference number: EG-01-D-521	EG&G Contract No. DACA87-89-C-0076
Checked by: JF SHUBERT	EG&G Approved: K NELSON			Sheet 1 of 2
Engineer: SL DANSIE	PMCD Mgr. Concur: N/A			Rev. 23A

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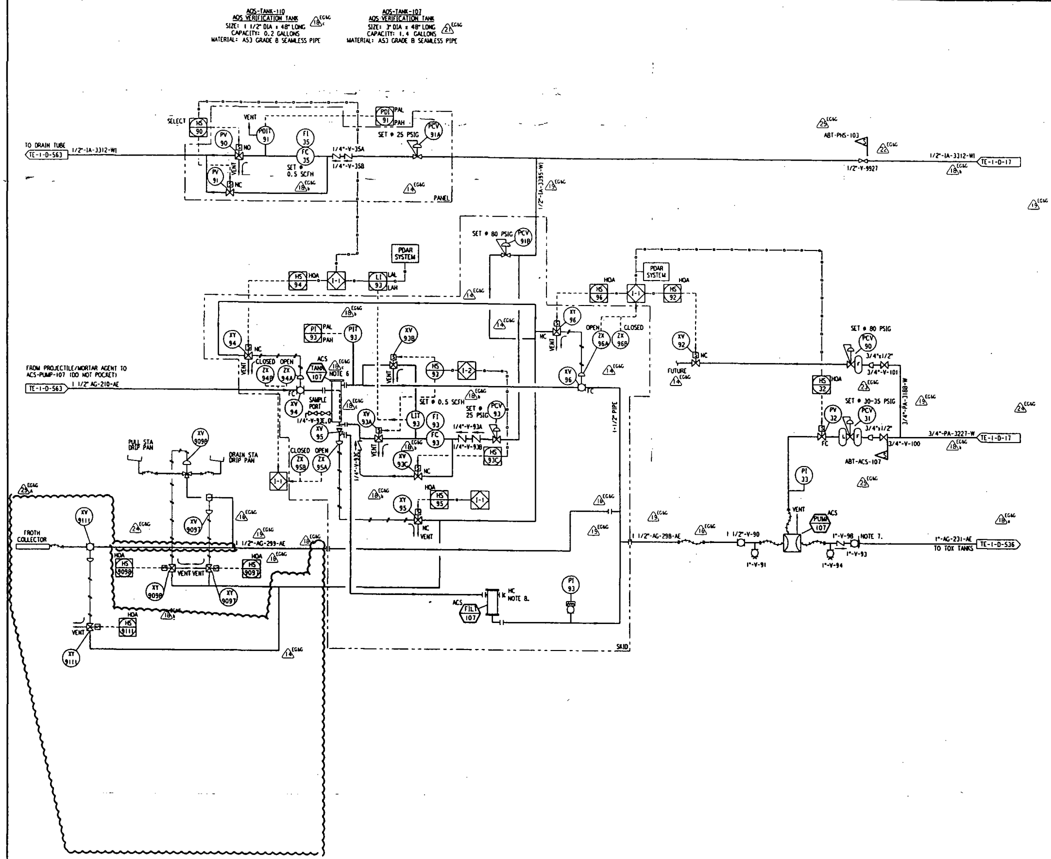

NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK.		PROJ. ENGR.			
20a	12/15/98	REVISED PER ECP 2569; MDM-01-0418	SDN	JFS	DRD	DP			
21a	07/30/01	REVISED PER ECP 3826; MDM-01-0576	SDN	SLD		DP			
22a	12/02/02	REVISED PER EWO 02-0015740	SDN	SLD	RCR				
23a	12/09/03	REVISED PER EWO 03-0018482	DLP	TLW		MSB			
24a	02/23/04	REVISED PER EWO 04-35048 & ECP 4214	TLW	DLP		MSB			
25	05/10/05	REVISED PER EWO 85474	TLW	DLP		LRD			
25A	07/11/05	REVISED PER EWO 106334 & ECP 4333	DLP						

NOTES:

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2. FOR LEGEND, SYMBOLS, AND GENERAL NOTES, SEE DRAWING TE-00-D-901.
3. MINIMIZE LENGTH OF ALL AGENT PIPING.
4. PCV AND FILTER/LUBRICATOR TO BE SUPPLIED WITH THE PUMP.
5. ALL INSTRUMENTATION TO BE SUPPLIED WITH THE AOS VERIFICATION TANK.
6. AOS VERIFICATION TANKS ACS-TANK-107 OR ACS-TANK-110 WILL BE USED AS REQUIRED FOR MUNITION TYPE BEING PROCESSED.
7. INSTALL SPECTACLE BLIND WHEN NOT IN USE.
8. (OPTION) DECON TAP.

LEGEND:

-·-·-·- FUTURE

REFERENCE DRAWINGS:

EG-01-M-5114 MDB ACS PHS-MDM-103 ASSEMBLY
EG-01-M-5102 SHT.1 MDB ACS PHS-MDM-102 ASSEMBLY
EG-01-M-5102 SHT.2 MDB ACS PHS-MDM-101 ASSEMBLY
EG-01-D-521 SHT.1 MDB AGENT COLLECTION SYSTEM PHS-MDM-102 P&ID
TE-01-D-521 MDB AGENT COLLECTION SYSTEM PHS-MDM-101 P&ID
EG-01-M-5101 SHT.2 MDB ACS PHS-MDM-102 INSTALLATION DETAILS
EG-01-M-5101 SHT.3 MDB ACS PHS-MDM-101 GENERAL ARRANGEMENT
EG-01-M-5115 SHT.1 MDB ACS PHS-MDM-103 INSTALLATION DETAILS
EG-01-M-5115 SHT.2 MDB ACS PHS-MDM-103 PIPE SPOOLS DETAILS

NOTE:
REFER TO DRAWING TE-1-D-521 PHS-MDM-101 AND EG-01-D-521 SHEET 1 PHS-MDM-102 FOR INFORMATION ON AGENT COLLECTION SYSTEM

Symbol	Description	Date	Approved
25A	REVISED FOR CONSTRUCTION		
25	REVISED AS BUILT	06/09/05	LRD
24	REVISED	04/06/04	MSB
23	REVISED	12/09/03	MSB
22	REVISED PER CONSTRUCTION	12/16/02	RCR
21	REVISED PER CONSTRUCTION	07/31/01	DP
20	REVISED PER CONSTRUCTION	12/16/98	DRD
19	REVISED PER CONSTRUCTION	10/20/98	DP
	Revisions		

DEPARTMENT OF THE ARMY
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CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

EG&G A Division of URS

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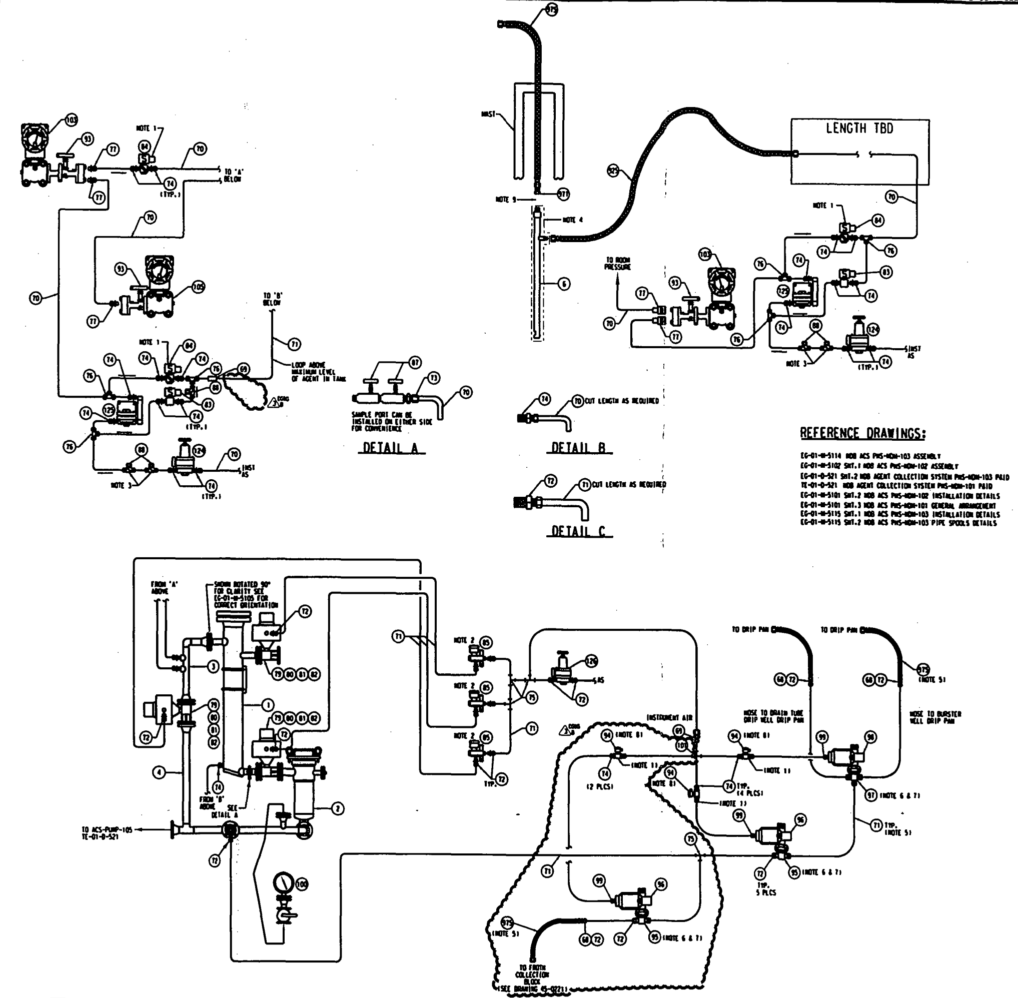
TOOELE ARMY DEPOT
TOOELE, UTAH

CHEMICAL STOCKPILE DISPOSAL PROGRAM
MUNITIONS DEMILITARIZATION BUILDING
AGENT COLLECTION SYSTEM PHS-MDM-103
PIPING & INSTRUMENT DIAGRAM

Drawn by: D ANDERSON	Date: 04/16/98			
Checked by: SG HILTON	EG&G Approved: RJ NELSON	Scale: NO SCALE	Sheet reference number: EG-01-D-521	EG&G Contract No. DACA87-89-C-0076
Engineer: DAVE PARK	PMCD Mgr. Concur: N/A			Sheet 2 of 2 / Rev. 25A



NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK.					
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1a	[illegible]	REVISED PER EWO 03-0008226	TLW	SLD	MSB				
2a	[illegible]	REVISED PER EWO 04-35048 & ECP 4214	TLW	DLP	MSB				
3	[illegible]	REVISED PER EWO 96566	DLP	TLW	MSB				
3A	[illegible]	REVISED PER EWO 103740 & ECP 4333	DLP	TLW	PTC				
3B	[illegible]	REVISED PER EWO 103740 & ECP 4333	DLP	TLW	PTC				

NOTES:

1. SEE DETAIL B FOR VENT DETAIL.
2. SEE DETAIL C FOR VENT DETAIL.
3. CHECK VALVES MUST BE MOUNTED IN A HORIZONTAL POSITION WITH THE BONNET NUT ON TOP. VERIFY ORIENTATION FOR CORRECT FLOW DIRECTION.
4. SEE DRAWING 3051-45-M-72 FOR DRAIN TUBE ASSEMBLY. SEE DRAWING EG-01-M 5113 FOR EXPLODED VIEW OF THE DRAIN TUBE ASSEMBLY.
5. TUBING AND HOSE RUNS TO BE KEPT AS SHORT AS POSSIBLE WITH NO LOW POINTS TO COLLECT LIQUID.
6. PAINT PER SPEC: 099000.
7. FIELD MOUNT VALVES ON AOS SKID.
8. SOLEINOIDS ARE MOUNTED TO ACTUATORS.
9. DRAIN TUBE GOES BETWEEN DRAIN TUBE EXTENSION AND HOSE. SEE EG-01-M-5113 FOR EXPLODED VIEW.

REFERENCE DRAWINGS:

EG-01-M-5114 MDB ACS PHS-MDM-103 ASSEMBLY
EG-01-M-5102 SHT.1 MDB ACS PHS-MDM-102 ASSEMBLY
EG-01-D-521 SHT.2 MDB AGENT COLLECTION SYSTEM PHS-MDM-103 P&ID
TE-01-D-521 MDB AGENT COLLECTION SYSTEM PHS-MDM-101 P&ID
EG-01-M-5101 SHT.2 MDB ACS PHS-MDM-102 INSTALLATION DETAILS
EG-01-M-5101 SHT.3 MDB ACS PHS-MDM-101 GENERAL ARRANGEMENT
EG-01-M-5115 SHT.1 MDB ACS PHS-MDM-103 INSTALLATION DETAILS
EG-01-M-5115 SHT.2 MDB ACS PHS-MDM-103 PIPE SPOOLS DETAILS

BILL OF MATERIAL

ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
1	ACS-TANK, SEE EG-01-M-5105			1
2	ACS-FILT, SEE EG-01-M-5109			1
3	SPOOL-31, SEE EG-01-M-5115 SHT 2			1
4	SPOOL-32, SEE EG-01-M-5115 SHT 2			1
5	SPOOL-33, SEE EG-01-M-5115 SHT 2			1
6	DRAIN TUBE EXTENSION, SEE EG-01-M-5103			1
68	CONNECTOR, MALE, 1/2JIC x MALE, 1/2NPT	PARKER	8-8FX1	2
69	UNION, REDUCING, 1/2Tx1/4T	SWAGELOK	SS-810-6-4	1
70	TUBING, 1/4" DIA, ASTM A269, GR TP316			100 FT
71	TUBING, 1/2" DIA, ASTM A269, GR TP316			40 FT
72	CONNECTOR, MALE, 1/2Tx1/2NPT	SWAGELOK	SS-810-1-8	11
73	CONNECTOR, MALE, 1/2Tx1/4NPT	SWAGELOK	SS-810-1-4	[illegible]
74	CONNECTOR, MALE, 1/4Tx1/4NPT	SWAGELOK	SS-400-1-4	21
75	TEE, UNION, 1/2Tx1/2Tx1/2T	SWAGELOK	SS-810-3	4
76	TEE, UNION, 1/4Tx1/4Tx1/4T	SWAGELOK	SS-400-3	4
77	CONNECTOR, MALE, 1/4T TO 1/2NPT	SWAGELOK	SS-400-1-8	8
78	HEX NIPPLE, 1/4NPT	CAJON	SS-4-HN	1
79	POSITION SW, VALVE, BALL	STONEL	P02-PE-2R	3
80	VALVE, BALL, FLANGED	APOLLO	87-100N BP0400-SM	3
81	VALVE, ACTUATOR	APOLLO	3R-078-00	3
82	VALVE, BALL, FLANGED, REPAIR KIT	APOLLO	87-02701	3
83	VALVE, SOLENOID, 2-WAY, 1/4NPT	ASCO	8262G220T	3
84	VALVE, SOLENOID, 3-WAY, 1/4NPT	ASCO	8320G201T	2
85	VALVE, SOLENOID, 3-WAY 1/2NPT	ASCO	8300B403T	3
87	VALVE, GUAGE, 1/2 M/F NPT	AGCO	H1-VVS-440R	2
88	VALVE, CHECK, 1/4T	NUPRO	SS-53S4	5
93	3 VALVE MANIFOLD, 1/2FLG x 1/2NPT	AGCO	M1TV1S-4-AN	3
94	VALVE, SOLENOID, 3 WAY, AC, 1/4NPT, (VALV-001346)	ASCO	EF8320G202	2
95	VALVE, BALL, 2 WAY, 1/2NPT, (VALV-0016361)	SWAGELOK	S-63TF8	2
96	ACTUATOR, PNEUMATIC, 2 WAY, (ACTU-0001241)	SWAGELOK	MS-133-SR	2
97	VALVE, BALL, 3 WAY, 1/2NPT, (VALV-0016371)	SWAGELOK	S-63XTF8	1
98	ACTUATOR, PNEUMATIC, 3 WAY, (ACTU-0001251)	SWAGELOK	MS-153-SR	1
99	CONNECTOR, MALE, 1/2T x 1/8NPT	SWAGELOK	SS-810-1-2	3
100	GUAGE, VACUUM 0-30"	WEKSLER	AA44-2 N019-4	[illegible]
101	CROSS, UNION, 1/4"	SWAGELOK	SS-400-4	1
103	PRESSURE TRANSDUCER, DIFFERENTIAL	ROSEMOUNT	1151DP4S22M1B1	2
105	PRESSURE TRANSDUCER	ROSEMOUNT	1151GP5S22S1M1B1	1
124	AIR REGULATOR, 1-50 PSI, 1/4NPT	MOORE	GC-40-50 W/GAUGE	2
125	FLOW CONTROLLER, 1/4NPT	MOORE	GC62-VA	2
126	AIR REGULATOR, 1-100 PSI, 1/4NPT	ITT	GSM60XTKEX3G	1
925	FLEX HOSE, 3/4T DIA, 96" LG (SSST-000235)	FLEXABLE	[illegible]	1
975	FLEX HOSE, 1/2" DIA, 48" LG, 1/2 FNPT ENDS (HOMN-0002061)	FUGATE	[illegible]	3
977	CONNECTOR, SWIVEL, (NYDF-000099)	PARKER	12-8 FGX	1

Symbol	Description	Date	Approved
3B	REVISED FOR CONSTRUCTION	[illegible]	PTC
3A	REVISED FOR CONSTRUCTION	[illegible]	PTC
3	REVISED AS BUILT	[illegible]	MSB
2	REVISED FOR CONSTRUCTION	[illegible]	MSB
1	REVISED PER CONSTRUCTION	[illegible]	MSB
0	ISSUED PER CONSTRUCTION	[illegible]	[illegible]

Revisions

DEPARTMENT OF THE ARMY
PROGRAM MANAGER FOR
CHEMICAL DEMILITARIZATION
ABERDEEN PROVING GROUND, MARYLAND

US ARMY ENGINEER DISTRICT SACRAMENTO
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

EG&G A Division of URS

US Army Corps of Engineers

TOOELE ARMY DEPOT
TOOELE, UTAH

CHEMICAL STOCKPILE DISPOSAL PROGRAM
MUNITIONS DEMILITARIZATION BUILDING
ACS PHS-MDM-101
ASSEMBLY

Drawn by: SD NICHOLES	Date: 11/18/98				
Checked by: JF SHUBERT	EG&G Approved: SG HILTON	Scale: NONE	Sheet reference number: EG-01-M-5102	EG&G Contract No. DACA87-[illegible]	
Engineer: DR DUNCAN	PMCD Mgr. Concur: N/A			Sheet 2 of 2	Rev. 3B

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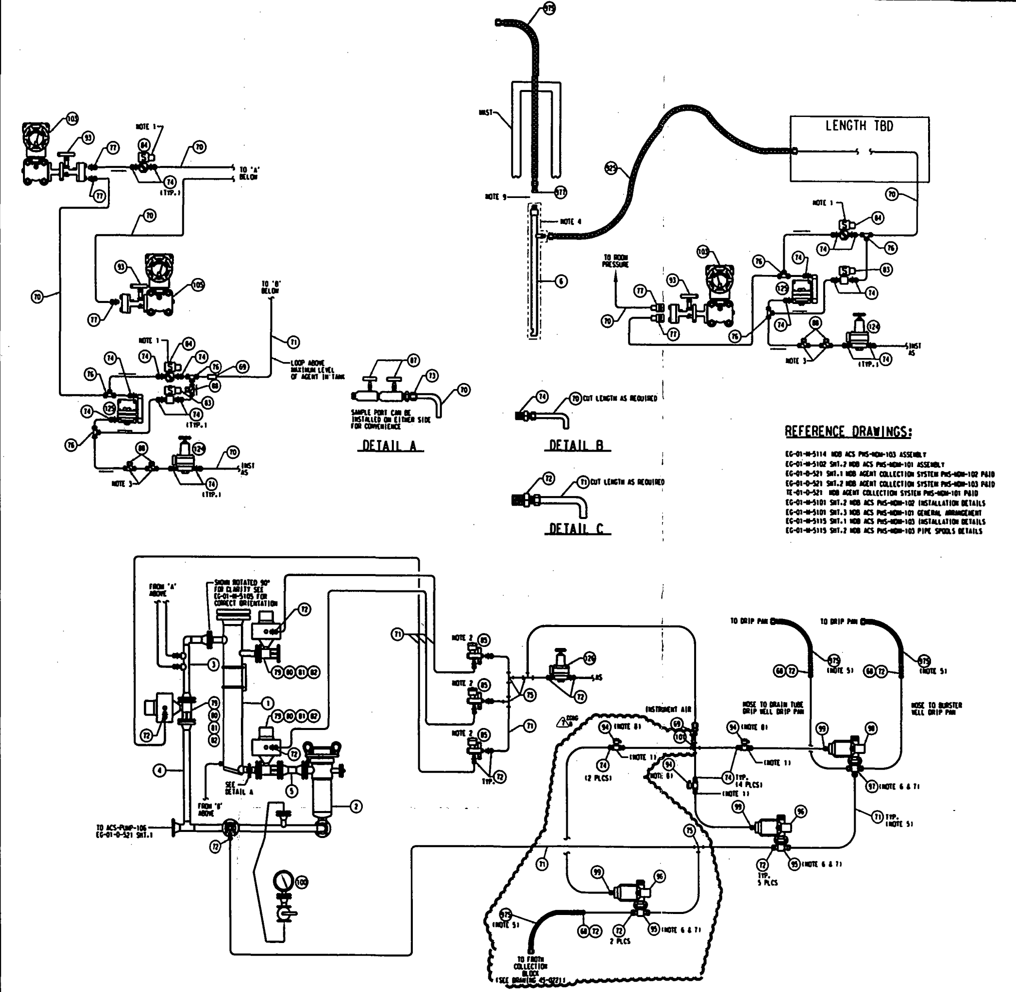
2 UNCONTROLLED COPY - UNLESS STAMPED OTHERWISE BY DCC[1]

NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK.					
3a	[illegible]	REVISED PER EWO 98-24945 & ECP 3164	SDN	JFS	DRD				
4a	[illegible]	REVISED PER EWO 03-0008226	TLW	SLD	MSB				
5a	[illegible]	REVISED PER EWO 03-0019435	DLP	TLW	MSB				
6a	[illegible]	REVISED PER EWO 04-35048 & ECP 4214	TLW	DLP	MSB				
7	[illegible]	REVISED PER EWO 96566	DLP	TLW	MSB				
7A	[illegible]	REVISED PER EWO 103740 & ECP 4333	DLP	TLW	PTC				
7B	[illegible]	REVISED PER EWO 103740 & ECP 4333	DLP	TLW	PTC				

NOTES:

1. SEE DETAIL B FOR VENT DETAIL.
2. SEE DETAIL C FOR VENT DETAIL.
3. CHECK VALVES MUST BE MOUNTED IN A HORIZONTAL POSITION WITH THE BONNET NUT ON TOP. VERIFY ORIENTATION FOR CORRECT FLOW DIRECTION.
4. SEE DRAWING 3051-45-M-72 FOR DRAIN TUBE ASSEMBLY. SEE DRAWING EG-01-M-5113 FOR EXPLODED VIEW OF THE DRAIN TUBE ASSEMBLY.
5. TUBING AND HOSE RUNS TO BE KEPT AS SHORT AS POSSIBLE WITH NO LOW POINTS TO COLLECT LIQUID.
6. PAINT PER SPEC: 099000.
7. FIELD MOUNT VALVES ON AOS SKID.
8. SOLENOIDS ARE MOUNTED TO ACTUATORS.
9. DRAIN TUBE GOES BETWEEN DRAIN TUBE EXTENSION AND HOSE. SEE EG-01-M-5113 FOR EXPLODED VIEW.



REFERENCE DRAWINGS:

EG-01-M-5114 MDB ACS PHS-MDM-103 ASSEMBLY
EG-01-M-5102 SHT.2 MDB ACS PHS-MDM-101 ASSEMBLY
EG-01-D-521 SHT.1 MDB AGENT COLLECTION SYSTEM PHS-MDM-102 P&ID
EG-01-D-521 SHT.2 MDB AGENT COLLECTION SYSTEM PHS-MDM-103 P&ID
TE-01-D-521 MDB AGENT COLLECTION SYSTEM PHS-MDM-101 P&ID
EG-01-M-5101 SHT.2 MDB ACS PHS-MDM-102 INSTALLATION DETAILS
EG-01-M-5101 SHT.3 MDB ACS PHS-MDM-101 GENERAL ARRANGEMENT
EG-01-M-5115 SHT.1 MDB ACS PHS-MDM-103 INSTALLATION DETAILS
EG-01-M-5115 SHT.2 MDB ACS PHS-MDM-103 PIPE SPOOLS DETAILS

BILL OF MATERIAL

ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
1	ACS-TANK. SEE EG-01-M-5105			1
2	ACS-FILT. SEE EG-01-M-5109			1
3	SPOOL-31. SEE EG-01-M-5115 SHT 2			1
4	SPOOL-32. SEE EG-01-M-5115 SHT 2			1
5	SPOOL-33. SEE EG-01-M-5115 SHT 2			1
6	DRAIN TUBE EXTENSION. SEE EG-01-M-5103			1
68	CONNECTOR, MALE, 1/2JIC x MALE, 1/2NPT	PARKER	8-8FTX	2
69	UNION, REDUCING, 1/2Tx1/4T	SWAGELOK	SS-810-6-4	1
70	TUBING, 1/4" DIA, ASTM A269, GR TP316			100 FT
71	TUBING, 1/2" DIA, ASTM A269, GR TP316			40 FT
72	CONNECTOR, MALE, 1/2Tx1/2NPT	SWAGELOK	SS-810-1-8	16
73	CONNECTOR, MALE, 1/2Tx1/4NPT	SWAGELOK	SS-810-1-4	
74	CONNECTOR, MALE, 1/4Tx1/4NPT	SWAGELOK	SS-400-1-4	21
75	TEE, UNION, 1/2Tx1/2Tx1/2T	SWAGELOK	SS-810-3	4
76	TEE, UNION, 1/4Tx1/4Tx1/4T	SWAGELOK	SS-400-3	4
77	CONNECTOR, MALE, 1/4T TO 1/2NPT	SWAGELOK	SS-400-1-8	
78	HEX NIPPLE, 1/4MNPT	CAJON	SS-4-HN	1
79	POSITION SW, VALVE, BALL	STONEL	P02-PE-2R	3
80	VALVE, BALL, FLANGED	APOLLO	[illegible]	3
81	VALVE, ACTUATOR	APOLLO	3R-078-00	3
82	VALVE, BALL, FLANGED, REPAIR KIT	APOLLO	8T-02701	3
83	VALVE, SOLENOID, 2-WAY, 1/4NPT	ASCO	8262G220T	3
84	VALVE, SOLENOID, 3-WAY, 1/4NPT	ASCO	8320G201T	2
85	VALVE, SOLENOID, 3-WAY 1/2NPT	ASCO	8300B403T	3
87	VALVE, GUAGE, 1/2 M/F NPT	AGCO	H1-HVS-440R	2
88	VALVE, CHECK, 1/4T	NUPRO	SS-53S4	5
93	3 VALVE MANIFOLD, 1/2FLG x 1/2NPT	AGCO	M1TV1S-4-MN	3
94	VALVE, SOLENOID, 3 WAY, NC, 1/4NPT, (VALV-001346)	ASCO	EF8320G202	2
95	VALVE, BALL, 2 WAY, 1/2NPT, (VALV-0016361)	SWAGELOK	S-63TF8	2
96	ACTUATOR, PNEUMATIC, 2 WAY, (ACTU-0001241)	SWAGELOK	MS-133-SR	2
97	VALVE, BALL, 3 WAY, 1/2NPT, (VALV-0016371)	SWAGELOK	S-63XTF8	1
98	ACTUATOR, PNEUMATIC, 3 WAY, (ACTU-0001251)	SWAGELOK	MS-153-SR	1
99	CONNECTOR, MALE, 1/2T x 1/8NPT	SWAGELOK	SS-810-1-2	3
100	GUAGE, VACUUM 0-30"	WEKSLER	AA44-2 N019-4	1
101	CROSS, UNION, 1/4"T	SWAGELOK	SS-400-4	1
103	PRESSURE TRANSDUCER, DIFFERENTIAL	ROSEMOUNT	1151DP4S22M1B1	2
105	PRESSURE TRANSDUCER	ROSEMOUNT	1151GP5S22S1M1B1	1
124	AIR REGULATOR, 1-50 PSI, 1/4NPT	MOORE	0C-40-50 W/GAUGE	2
125	FLOW CONTROLLER, 1/4NPT	MOORE	GC62-VA	2
126	AIR REGULATOR, 1-100 PSI, 1/4NPT	ITT	GSH60XTKEX3G	1
925	FLEX HOSE, 1/4" DIA, 96" LG. (ASSY-0002351)	FLEXABLE	[illegible]	1
975	FLEX HOSE, 1/2" DIA, 48" LG. 1/2 FNPT ENDS (HOWM-000206)	FUGATE	[illegible]	3
977	CONNECTOR, SWIVEL, (HYDF-000099)	PARKER	12-8 FGX	1

Symbol	Description	Date	Approved
7B	REVISED FOR CONSTRUCTION	[illegible]	PTC
7A	REVISED FOR CONSTRUCTION	[illegible]	PTC
7	REVISED AS BUILT	[illegible]	MSB
6	REVISED FOR CONSTRUCTION	[illegible]	MSB
5	REVISED PER CONSTRUCTION	[illegible]	MSB
4	REVISED PER CONSTRUCTION	[illegible]	MSB
3	REVISED PER CONSTRUCTION	11/24/98	DRD
2	REVISED PER CONSTRUCTION	10/05/98	DRD
	Revisions		

DEPARTMENT OF THE ARMY
PROGRAM MANAGER FOR
CHEMICAL DEMILITARIZATION
ABERDEEN PROVING GROUND, MARYLAND

US ARMY ENGINEER DISTRICT SACRAMENTO
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

EG&G A Division of URS

US Army Corps of Engineers

TOOELE ARMY DEPOT
TOOELE, UTAH

CHEMICAL STOCKPILE DISPOSAL PROGRAM
MUNITIONS DEMILITARIZATION BUILDING
ACS PHS-MDM-102
ASSEMBLY

Drawn by: SD NICHOLES	Date: 08/21/98	Scale: NO SCALE	Sheet reference number: EG-01-M-5102	EG&G Contract No. DACA87-89-C-0076
Checked by: SG HILTON	EG&G Approved: RJ NELSON			Sheet 1 of 2
Engineer: DR DUNCAN	PMCD Mgr. Concur: N/A			Rev. 7B

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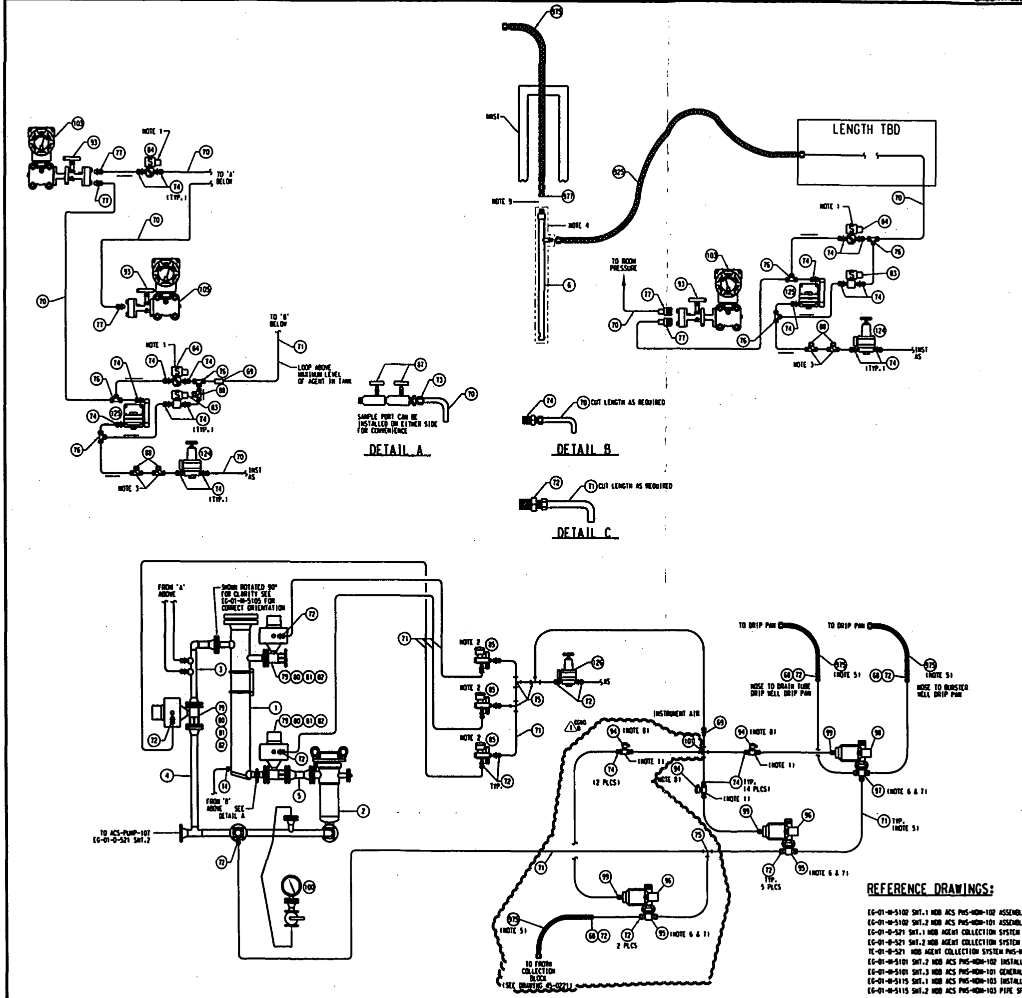
NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK.					
0a	[illegible]	ISSUED PER EWO 04-35040 & ECP 4214	TLW	DLP	MSB				
1	[illegible]	ISSUED PER EWO 96566	DLP	TLW	MSB				
1A	[illegible]	ISSUED PER EWO 103740 & ECP 4333	DLP	TLW	PTC				
1B	[illegible]	ISSUED PER EWO 103740 & ECP 4333	DLP	TLW	PTC				

NOTES:

1. SEE DETAIL B FOR VENT DETAIL.
2. SEE DETAIL C FOR VENT DETAIL.
3. CHECK VALVES MUST BE MOUNTED IN A HORIZONTAL POSITION WITH THE BONNET NUT ON TOP. VERIFY ORIENTATION FOR CORRECT FLOW DIRECTION.
4. SEE DRAWING 3051-45-M-72 FOR DRAIN TUBE ASSEMBLY. SEE DRAWING EG-01-M-5113 FOR EXPLODED VIEW OF THE DRAIN TUBE ASSEMBLY.
5. TUBING AND HOSE RUNS TO BE KEPT AS SHORT AS POSSIBLE WITH NO LOW POINTS TO COLLECT LIQUID.
6. PAINT PER SPEC: 099000.
7. FIELD MOUNT VALVES CLOSE TO P & D STATION.
8. SOLENOIDS ARE MOUNTED TO ACTUATORS.
9. DRAIN TUBE GOES BETWEEN DRAIN TUBE EXTENSION AND HOSE. SEE EG-01-M-5113 FOR EXPLODED VIEW.
10. RECREATED FROM DWGS EG-51-3012 SHTS. 9 & 4.



REFERENCE DRAWINGS:

EG-01-M-5102 SHT.1 MDB ACS PHS-MDM-102 ASSEMBLY
EG-01-M-5102 SHT.2 MDB ACS PHS-MDM-101 ASSEMBLY
EG-01-D-521 SHT.1 MDB AGENT COLLECTION SYSTEM PHS-MDM-102 P&ID
EG-01-D-521 SHT.2 MDB AGENT COLLECTION SYSTEM PHS-MDM-103 P&ID
TE-01-D-521 MDB AGENT COLLECTION SYSTEM PHS-MDM-101 P&ID
EG-01-M-5101 SHT.2 MDB ACS PHS-MDM-102 INSTALLATION DETAILS
EG-01-M-5101 SHT.3 MDB ACS PHS-MDM-101 GENERAL ARRANGEMENT
EG-01-M-5115 SHT.1 MDB ACS PHS-MDM-103 INSTALLATION DETAILS
EG-01-M-5115 SHT.2 MDB ACS PHS-MDM-103 PIPE SPOOLS DETAILS

BILL OF MATERIAL

ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
1	ACS-TANK, SEE EG-01-M-5105			1
2	ACS-FILT, SEE EG-01-M-5109			1
3	SPOOL-31, SEE EG-01-M-5115 SHT 2			1
4	SPOOL-32, SEE EG-01-M-5115 SHT 2			1
5	SPOOL-33, SEE EG-01-M-5115 SHT 2			1
6	DRAIN TUBE EXTENSION, SEE EG-01-M-5103			1
68	CONNECTOR, MALE, 1/2JIC x MALE, 1/2MPT	PARKER	8-8F1X	2
69	UNION, REDUCING, 1/2Tx1/4T	SWAGELOK	SS-810-6-4	1
70	TUBING, 1/4" DIA, ASTM A269, GR TP316			100 FT
71	TUBING, 1/2" DIA, ASTM A269, GR TP316			40 FT
72	CONNECTOR, MALE, 1/2Tx1/2MPT	SWAGELOK	SS-810-1-8	11
73	CONNECTOR, MALE, 1/2Tx1/4MPT	SWAGELOK	SS-810-1-4	
74	CONNECTOR, MALE, 1/4Tx1/4MPT	SWAGELOK	SS-400-1-4	21
75	TEE, UNION, 1/2Tx1/2Tx1/2T	SWAGELOK	SS-810-3	4
76	TEE, UNION, 1/4Tx1/4Tx1/4T	SWAGELOK	SS-400-3	4
77	CONNECTOR, MALE, 1/4T TO 1/2MPT	SWAGELOK	SS-400-1-8	
78	HEX NIPPLE, 1/4MNPT	CAJON	SS-4-HN	1
79	POSITION SW, VALVE, BALL	STONEL	P02-PE-2R	3
80	VALVE, BALL, FLANGED	APOLLO	[illegible]	3
81	VALVE, ACTUATOR	APOLLO	3R-078-00	3
82	VALVE, BALL, FLANGED, REPAIR KIT	APOLLO	87-02701	3
83	VALVE, SOLENOID, 2-WAY, 1/4MPT	ASCO	8262G220T	3
84	VALVE, SOLENOID, 3-WAY, 1/4MPT	ASCO	8320G201T	2
85	VALVE, SOLENOID, 3-WAY 1/2MPT	ASCO	8300B403T	3
87	VALVE, GUAGE, 1/2 M/F MPT	AGCO	H1-VVS-440R	2
88	VALVE, CHECK, 1/4T	NUPRO	SS-53S4	5
93	3 VALVE MANIFOLD, 1/2FLG x 1/2MPT	AGCO	M4TVIS-4-AN	3
94	VALVE, SOLENOID, 3 WAY, NC, 1/4MPT, (VALV-001346)	ASCO	EF8320G202	2
95	VALVE, BALL, 2 WAY, 1/2MPT, (VALV-001636)	SWAGELOK	S-63TF8	2
96	ACTUATOR, PNEUMATIC, 2 WAY, (ACTU-000124)	SWAGELOK	MS-133-SR	2
97	VALVE, BALL, 3 WAY, 1/2MPT, (VALV-001637)	SWAGELOK	S-63XTF8	1
98	ACTUATOR, PNEUMATIC, 3 WAY, (ACTU-000125)	SWAGELOK	MS-153-SR	1
99	CONNECTOR, MALE, 1/2T x 1/8MNPT	SWAGELOK	SS-810-1-2	3
100	GUAGE, VACUUM 0-30"	WEKSLER	AA44-2 V019-4	
101	CROSS, UNION, 1/2" T	SWAGELOCK	SS-[illegible]	1
103	PRESSURE TRANSDUCER, DIFFERENTIAL	ROSEMOUNT	1151DP[illegible]	2
105	PRESSURE TRANSDUCER	ROSEMOUNT	1151GP[illegible]	1
124	AIR REGULATOR, 1-50 PSI, 1/4MPT	MOORE	40-50 W/GAUGE	2
125	FLOW CONTROLLER, 1/4MPT	MOORE	62-VA	2
126	AIR REGULATOR, 1-100 PSI, 1/4MPT	ITT	GSH60XTKEX3G	1
925	FLEX HOSE, 1/4" DIA, 96" LG, (ASSY-000235)	FLEXABLE	[illegible]	1
975	FLEX HOSE, 1/2" DIA, 48" LG, 1/2 FNPT ENDS (HOSE-000205)	FUGATE	[illegible]	3
977	CONNECTOR, SWIVEL, (HTOF-000099)	PARKER	12-8 F6X	1

Symbol	Description	Date	Approved
1B	REVISED FOR CONSTRUCTION	[illegible]	PTC
1A	REVISED FOR CONSTRUCTION	[illegible]	PTC
1	ISSUED AS BUILT	[illegible]	MSB
0	ISSUED FOR CONSTRUCTION	[illegible]	MSB
	Revisions		

DEPARTMENT OF THE ARMY
PROGRAM MANAGER FOR
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ABERDEEN PROVING GROUND, MARYLAND

US ARMY ENGINEER DISTRICT SACRAMENTO
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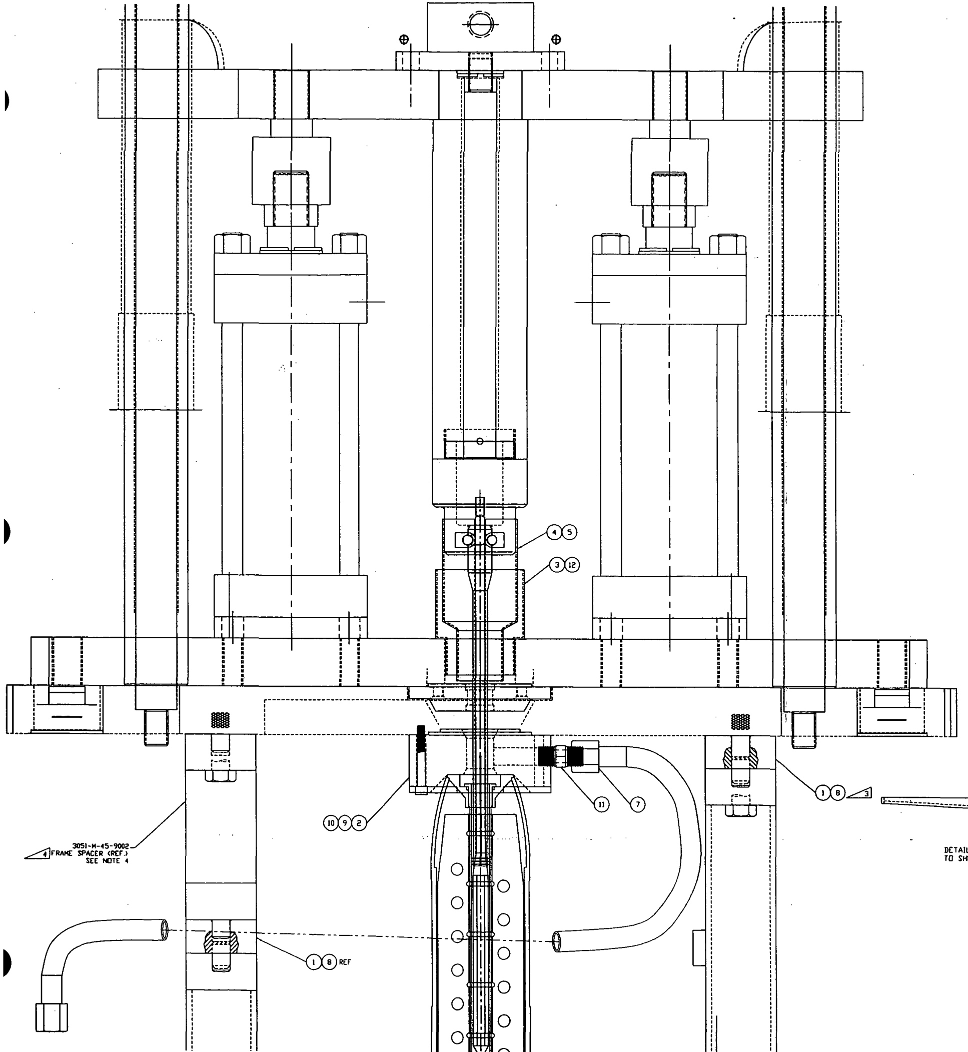
EG&G A Division of URS

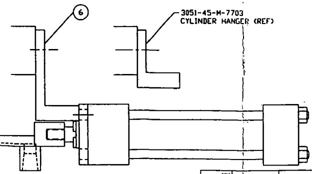
US Army Corps of Engineers

TOOELE ARMY DEPOT
TOOELE, UTAH

CHEMICAL STOCKPILE DISPOSAL PROGRAM
MUNITIONS DEMILITARIZATION BUILDING
ACS PHS-MDM-103
ASSEMBLY

Drawn by: TL WALTON	Date: 02/27/04	Scale: NO SCALE	Sheet reference number: EG-01-M-5114	EG&G Contract No. DACA87-[illegible]
Checked by: DL PHILIPS	EG&G Approved: DF RODGERS			Sheet 1 of
Engineer: MS BRYANT	PMCD Mgr. Concur: N/A			Rev. 1B





DETAIL OF DRIP PAN ASSEMBLY
TO SHOW NEW CYLINDER HANGER

PARTS LIST

FIND NO	QTY	UNIT	NOMENCLATURE	PART NO	MATERIAL OR MFG.
1	2	EA	FRAME SPACER FOR FROTH COLLECTION	45-0324	
2	1	EA	MODIFIED STOP PLATE - FROTH	SEE CHART 1	
3	1	EA	FROTH DAM	45-0321-1	
4	1	EA	FROTH SHIELD	SEE CHART 1	
5	2	EA	DETENT PIN	SEE CHART 1	
6	1	EA	CYLINDER HANGER - FROTH	45-0321-2	
7	REF		FLEX HOSE, BRAIDED, ½ NPT FEMALE ENDS (MDMM-000206), 48 INCH LONG	08-TS-06-06-S6-P-48	FUGATE
8	4	EA	HHCS UNC-2A ZN 3/4-10 X 3.75 LONG	91247A854	MCMASTER CARR
9	4	EA	SHCS UNC-2A ZN 3/8-16 X 2.50 LONG	90128A634	MCMASTER CARR
10	1	EA	SHCS UNC-2A ZN 1/4-20 X 2.50 LONG	90128A255	MCMASTER CARR
11	1	EA	COUPLING, 1/2 NPT X 1/2 NPT, STAINLESS STEEL	4880SK911	MCMASTER CARR
12	A/R		SILICONE RTV		GE

CHART 1

FIND	DESCRIPTION	MUNITION			
		M360	M110 & M60	M121A1	4.2 MORTAR
2	MODIFIED STOP PLATE - FROTH	45-0322	45-0285	45-0286	45-0287
4	FROTH SHIELD	45-0326	45-0328	45-0327	45-0329
5	BALL LOCK PIN - CARR-LANE	CL7BLPT3.25	CL6BLPT3.25	CL8BLPT4.25	CL6BLPT3.25
REF	DETENT PIN DIAMETER	ø0.435	ø0.372	ø0.497	ø0.372
REF	DETENT PIN LENGTH	3.251	3.253	4.250	3.253

NOTES:

1. FROTH COLLECTION PARTS SHOWN ARE FOR THE 4.2 MORTAR. PARTS FOR THE OTHER MUNITIONS ATTACH AND OPERATE IN THE SAME MANNER USING THE SAME HARDWARE.
2. RETAIN PARTS AND HARDWARE REMOVED FOR INSTALLATION OF THE FROTH PARTS FOR POSSIBLE REUSE WHEN OPERATING WITHOUT FROTH COLLECTION.
3. THE FROTH FRAME SPACER, FIND 1, IS USED IN TWO PLACES WHENEVER FROTH COLLECTION PARTS ARE IN PLACE.
4. FRAME SPACER (3051-M-45-9002) IS USED IN ADDITION TO ITEM 1 WHEN PROCESSING M110 AND M121A1 PROJECTILES.
5. FLEXIBLE HOSE (FIND 7) CONNECTS WITH THE FROTH COLLECTION FITTING OF THE MDM PDS DRIP PAN VALVE MANIFOLD, CDTF 54-0006.
6. REFER TO CDTF DRAWING NUMBER AQS-0018 FOR MDM SYSTEM P&ID INFORMATION.

NO	ECP#	REVISIONS	DATE	BY	APRV
10B		REVISED FOR CONSTRUCTION PER EWO-103740 & ECP 4338	1/24/06	DLP	TLW/PTC
10A		REVISED FOR CONSTRUCTION PER EWO 103740 & ECP 4338	7/11/05	DLP	TLW/PTC

TOLERANCES
ALL DIMENSIONS IN INCHES
.X: ± 0.1 X ≥ 1/8: ± 1/16
.XX: ± 0.03 1/16: ± 1/32
.XXX: ± 0.005 1/32: ± 1/64
ANGULAR: ± 1°
UNLESS OTHERWISE NOTED

CDTF CHEMICAL DEMILITARIZATION TRAINING FACILITY

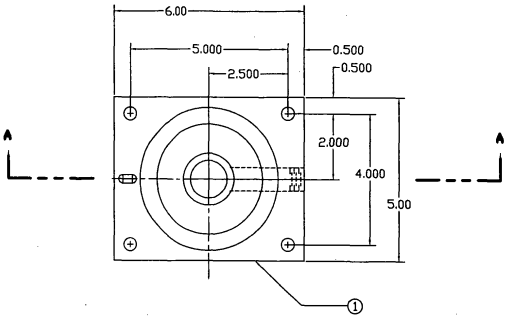
ASSEMBLY DRAWING
FROTH COLLECTION
MDM

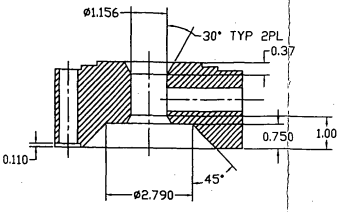
GENERAL PHYSICS CORPORATION
Test & Eval Group
PO Box 38, Bldg. E-45M1
APG-EA, MD 21010-0038

DRAWN BY: DWW
CHECKED BY: JRB
DATE: 10/27/04
REV. A
SHEET NO. 1 OF 1
SCALE: 1:2 (D SIZE)
DRAWING NO: 45-0221

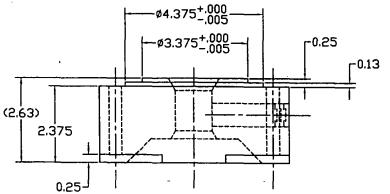
OTHERS\MECH\45-0221.110B 1/25/2006 8:15:22 AM

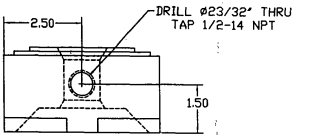
PARTS LIST					
FIND NO	QTY	UNIT	NOMENCLATURE	PART NO	MATERIAL OR MFG.
1	1	EA	BAR, 6 X 5 X 2&2	45-0287-1	HR 4130 STL

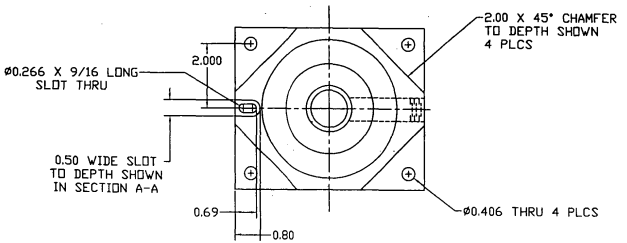




SECTION A-A







NOTES:

1. HARDEN TO Rc 43 TO 46
2. FINISH 1.4.3.1, 0.0008 THICK, MIL-STD-171-0
3. SOME HIDDEN LINES OMITTED FOR CLARITY
4. ALL MACHINED SURFACES TO BE 125 RMS OR BETTER

NO	ECO#	REVISIONS	DATE	BY	APRV
B	-	ISSUED	11/05/04	DVW	JML
A	-	REDESIGNED PART	10/25/04	DVW	JML
-	-	ISSUE	3/5/03	SPR	

TOLERANCES
ALL DIMENSIONS IN INCHES
.X: ± 0.1 X ≥ 1/8: ± 1/16
.XX: ± 0.03 1/16: ± 1/32
.XXX: ± 0.005 1/32: ± 1/64
ANGULAR: ± 1°
UNLESS OTHERWISE NOTED

CHEMICAL DEMILITARIZATION TRAINING FACILITY

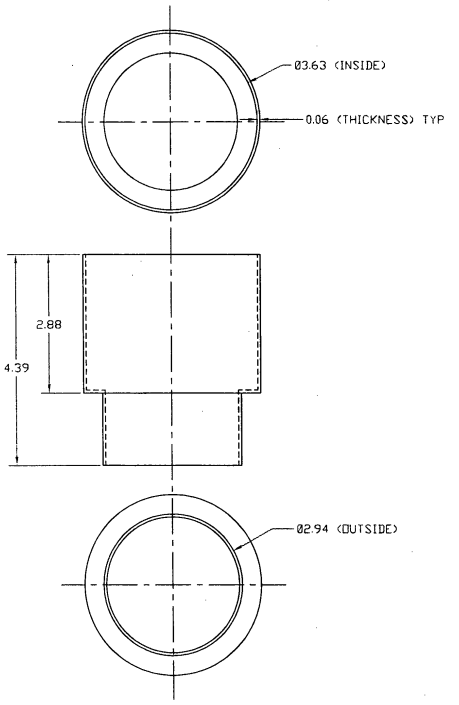
MODIFIED STOP PLATE 4.2 MORTAR
FROTH COLLECTION SYSTEM
MDM PUNCH & DRAIN STATION

GENERAL PHYSICS CORPORATION
Test & Eval Group
PO Box 38, Bldg. E-45M1
APG-EA, MD 21010-0038

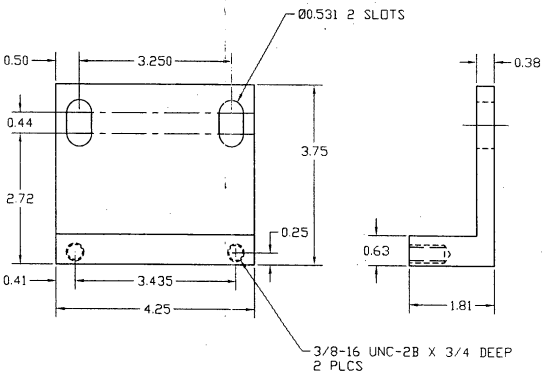
DRAWN BY: SPR	DATE:	REV.
CHECKED BY: JRB	14 FEB 2003	B
SHEET NO. 1 OF 1	SCALE: 1:2 C DWG	DRAWING NO: 45-0287

PARTS LIST					
FIND NO.	QTY.	UNIT	NOMENCLATURE	PART NO	MATERIAL OR MFG.
1		EA	FROTH DAM	45-0321-1	1020 HRS
2		EA	CYLINDER HANGER-FROTH	45-0321-2	ASTM 1020

10 EG&G A



① FROTH DAM



② CYLINDER HANGER - FROTH

(REF) 3051-45-M-7703, CYLINDER HANGER

NOTES: (FINDS 1 & 2)

1. SOME HIDDEN LINES ARE OMITTED FOR CLARITY
2. REMOVE ALL BURRS AND SHARP EDGES.
3. CLEAN ALL WELDS IF FABRICATED
4. FINISH 1.4.31, 0.0008 THICK, MIL-STD-171-0.

NO	ECP#	REVISIONS	DATE	BY	APRV
10A		REVISED FOR CONSTRUCTION PER EWO 103740 & ECP 433		DLP	
D		ISSUED	11/05/04	DWW	JML
C		DRAWING NUMBER WAS 45-0219	11/04/04	DWW	JML
B		DWG WAS "C" SIZE - ADDED FIND 2 - ADDED NOTES 1-4 MATERIAL FOR FIND 1 WAS 316 SS.	10/22/04	DWW	JML
A		ITEM 1 WAS 304 SS	4/30/01		JML

TOLERANCES
ALL DIMENSIONS IN INCHES
.X: ± 0.1 X ≥ 1/8: ± 1/16
.XX: ± 0.03 1/16: ± 1/32
.XXX: ± 0.005 1/32: ± 1/64
ANGULAR: ± 1°
UNLESS OTHERWISE NOTED

CHEMICAL DEMILITARIZATION TRAINING FACILITY

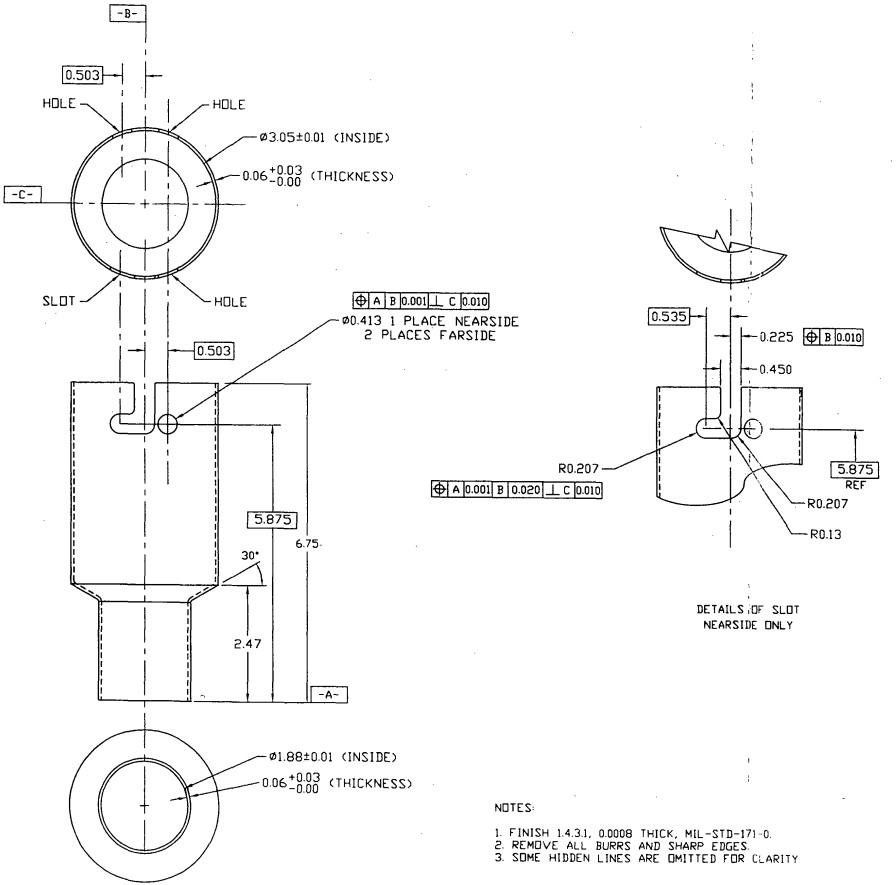
FROTH DAM AND FROTH CYLINDER HANGER MDM

GENERAL PHYSICS CORPORATION
Test & Eval Group
PO Box 38, Bldg E-45M1
APG-EA, MD 21010-0038

DRAWN BY: DWW	DATE: 102004	REV. D
CHECKED BY: JRB		
SHEET NO. 1 OF 1	SCALE: 1:1 (D SIZE)	DRAWING NO: 45-0321

..\45-0321.110A 7/13/2005 2:08:15 PM

PARTS LIST					
FIND NO	QTY	UNIT	NOMENCLATURE	PART NO	MATERIAL OR MFG.
1	1	EA	FROTH SHIELD, M2/A1 MORTAR	45-0329-1	1020 HRS



DETAILS OF SLOT
NEARSIDE ONLY

NOTES:

1. FINISH 1.4.3.1, 0.0008 THICK, MIL-STD-171-0.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. SOME HIDDEN LINES ARE OMITTED FOR CLARITY

NO	ECN#	REVISIONS	DATE	BY	APRV
-	-	ISSUED	11/05/04	DVW	JML

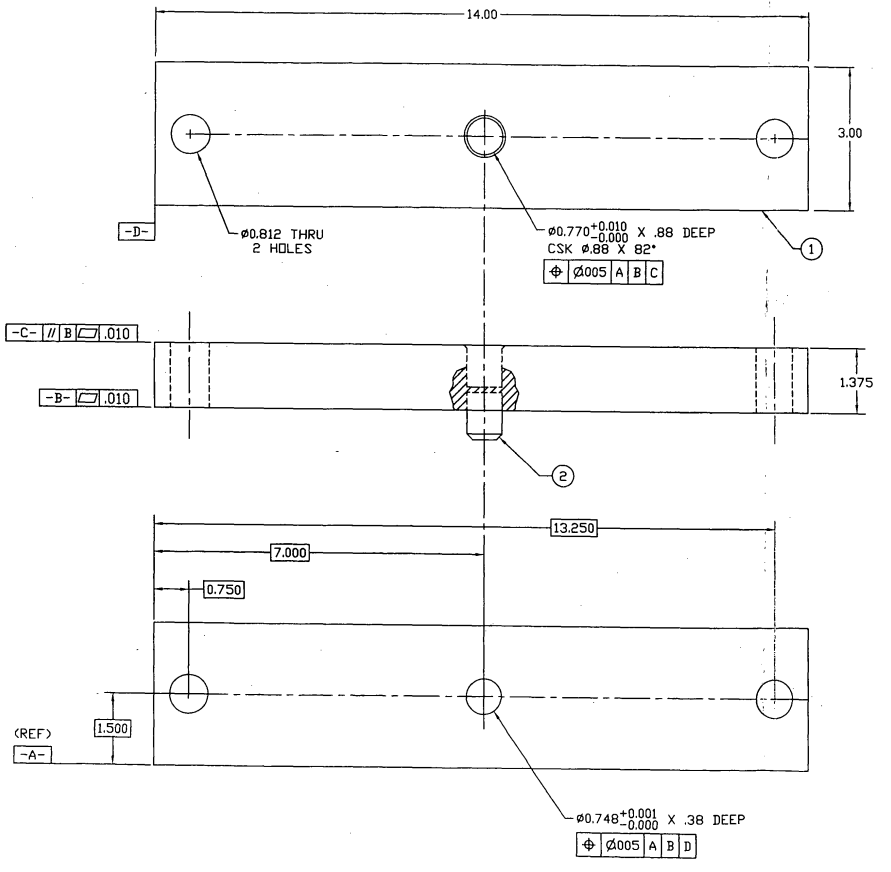
TOLERANCES
ALL DIMENSIONS IN INCHES
.X: ± 0.1 X ≥ 1/8: ± 1/16
.XX: ± 0.03 1/16: ± 1/32
.XXX: ± 0.005 1/32: ± 1/64
ANGULAR: ± 1°
UNLESS OTHERWISE NOTED

CHEMICAL DEMILITARIZATION TRAINING FACILITY

MDM FROTH SHIELD FOR 4.2 MORTAR

GENERAL PHYSICS CORPORATION
Test & Evol Group
PO Box 38, Bldg. E-4541
APG-EA, MD 21010-0038

DRAWN BY: DWW	DATE:	REV.
CHECKED BY: JRB	10/22/04	-
SHEET NO. 1 OF 1	SCALE: 1: 1 (D SIZE)	DRAWING NO: 45-0329



PARTS LIST

FIND NO	QTY	UNIT	NOMENCLATURE	PART NO	MATERIAL OR MFG.
1	1	EA	FLAT BAR 3 X 1 3/8 X 14 LG.	45-0324-1	SAE 1018
2	1	EA	DOWEL PIN, 3/4 DIA X 1 LG.	45-0324-2	98381A801

NOTES:

1. PREPARE ALL SURFACES IN ACCORDANCE WITH THE GENERAL REQUIREMENTS OF MIL-STD-171D. APPLY ONE COAT OF EPOLOID 7-W-20 PRIMER 0.002 INCHES THICK FOLLOWED BY TWO COATS OF EPOLOID 5-G-12 COLOR GREEN, 0.002 INCHES THICK MINIMUM, EACH COAT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

   ROWE PRODUCTS INC.
   NIAGRA FALLS, NY; MFG. NO. 77949

2. PRESS PIN AFTER PAINTING

3. SOME HIDDEN LINES OMITTED FOR CLARITY

NO	EO#	REVISIONS	DATE	BY	APRV
B		ISSUED	11/05/04	DWW	JML
A		DRAWING WAS "C" SIZE	10/22/04	DWW	JML

TOLERANCES
ALL DIMENSIONS IN INCHES
.X: ± 0.1 X ≥ 1/8: ± 1/16
.XX: ± 0.03 1/16: ± 1/32
.XXX: ± 0.005 1/32: ± 1/64
ANGULAR: ± 1°
UNLESS OTHERWISE NOTED

GENERAL PHYSICS CORPORATION
Test & Eval Group
PO Box 38, Bldg. E-45M1
APG-EA, MD 21010-0038

CHEMICAL DEMILITARIZATION TRAINING FACILITY

FRAME SPACER
FOR FROTH COLLECTION
MDM PUNCH AND DRAIN STATION

DRAWN BY: DWW	DATE:	REV.
CHECKED BY: JRB	10/19/04	B
SHEET NO. 1 OF 1	SCALE: 1:1 (D SIZE)	DRAWING NO: 45-0324

G: NOTICE TO MAILING LIST AND NEWSPAPER PUBLISHER

REQUEST NUMBER: TOCDF-MDM-02-0836

REQUEST TITLE: Froth Collection system for MDMs

SUMMARY: TOCDF has completed destruction of warfare munitions containing GB (Sarin) and VX. TOCDF is now in the process of modifying plant equipment for the processing of munitions containing the chemical warfare agents designated as H, HD and HT (collectively referred to as "Mustard" blister agent). The Mustard "campaign" is the third and final agent demilitarization campaign TOCDF is to undertake.

The Deseret Chemical Depot's chemical weapons stockpile contains approximately 63,500 4.2-inch mortars containing Mustard. Experience with Mustard-containing 4.2-inch mortars at the Johnston Atoll demilitarization site (JACADS) has shown that the liquid Mustard within the mortars may have experienced age-related internal pressurization. Mortars will be treated at TOCDF during the Non-Baseline Mustard campaign.

At JACADS many of the 4.2-inch mortars experienced "frothing" or foaming of their liquid contents when the agent cavity was breached. This resulted in some Mustard froth bubbling up and out of the mortars and onto the mortar body and surrounding machinery. In an effort to reduce the potential for agent contamination of TOCDF machinery and room surfaces, a "froth collection system" was designed to be installed on the Multipurpose Demilitarization Machines (MDMs) pull and drain station, where the 4.2-inch mortars will be processed. None of the munitions previously treated at the TOCDF MDMs exhibited a tendency to froth.

Concurrent with this modification request, TOCDF is requesting temporary authorization (TA) to begin installation and testing activities associated with the MDMs' 4.2-inch mortar froth collection systems prior to the end of the 60-day post-submittal period. The MDMs will not be used for hazardous waste treatment under the requested TA.